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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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An-Kee Lim

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EXAMINER

NOTE, JANIS L

ART UNIT

PAPER NUMBER

1756

DATE MAILED: 05/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/601,859

Applicant(s)

LIM ET AL.

Examiner

Janis L. Dote

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,7-9,11-13,15,16 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9,11,12,15,23 and 24 is/are allowed.
- 6) ☒ Claim(s) 1, 3-5,7, 8,13,16,21, and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on Jan. 11, 2006, has been entered.

2. The examiner acknowledges the cancellation of claims 2, 6, and 14, and the amendments to claims 1, 3-5, 8, 13, 22, and 24 set forth in the amendment filed on Mar. 13, 2006. Claims 1, 3-5, 7-9, 11-13, 15, 16, and 21-24 are pending.

3. The "Amendment to the claims" section filed on Jan. 11, 2006, did not comply with 37 CFR 1.121 for the reasons discussed in the "Notice of non-compliant amendment" mailed on Feb. 17, 2006. Accordingly, the "Amendment to the claims" section filed on Jan. 11, 2006, has not been entered.

4. The objection to the substitute specification filed on Apr. 28, 2005, set forth in the office action mailed on Sep. 12, 2005, paragraph 5, has been withdrawn in response to the

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amendments to paragraphs [0018], [0029], and [0033] set forth in the amendment filed on Jan. 11, 2006.

The objection to the specification set forth in the office action mailed on Sep. 12, 2005, paragraph 6, has been withdrawn in response to the amendments to paragraphs [0005], [0018], [0025], [0029], and [0033] set forth in the amendment filed on Jan. 11, 2006.

The rejections of claims 1-8, 14, 21, and 22 under 35 U.S.C. 112, second paragraph, set forth in the office action mailed on Sep. 12, 2005, paragraph 8, have been withdrawn in response to the amendments to claims 1, 5, and 8 and the cancellation of claims 6 and 14 set forth in the amendment filed on Mar. 13, 2006.

The objections to claims 1, 22, and 24 set forth in the office action mailed on Sep. 12, 2005, paragraph 11, have been withdrawn in response to the amendments to claims 1, 22, and 24 set forth in the amendment filed on Mar. 13, 2006.

The objection to claim 2 set forth in the office action mailed on Sep. 12, 2005, paragraph 12, has been mooted by the cancellation of claim 2 set forth in the amendment filed on Mar. 13, 2006.

The rejection of claims 1, 2, 4, 5, 7, and 8 under 35 U.S.C. 103(a) over Japanese Patent 2000-075509 (JP'509), as

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evidenced by the ACS File Registry Number RN 26201-32-1 and Japanese Patent 61-271050 (JP'050), combined with Japanese Patent 10-020515 (JP'515), as set forth in the office action mailed on Sep. 12, 2005, paragraph 17, has been withdrawn in response to the amendments to claims 1 and 5 set forth in the amendment filed on Mar. 13, 2006. Those amendments to claims 1 and 5 add the limitation that the photoreceptor exhibits "an $E_{1/2}$ of about 0.16 to about 0.22 $\mu\text{Joules}/\text{cm}^2$, where $E_{1/2}$ is an exposure quantity necessary for discharging 1/2 of V_o , an initial potential." JP'509 does not disclose that its single-layered photoreceptor exhibits an $E_{1/2}$ as recited in instant claims 1 and 5. Nor is there sufficient evidence in the present record to reasonably presume that the JP'509 photoreceptor exhibits an $E_{1/2}$ as recited in instant claims 1 and 5.

The rejection of claims 1-5, 7, and 8 under 35 U.S.C. 103(a) over US 2003/00228534 A1 (Zhu), as evidenced by applicants' admission in paragraph 0033 of the instant specification of the chemical identity of the material associated with the tradename MPCT 10 obtained from Mitshubishi [sic: Mitsubishi] Paper Mill Co., combined with US 6,528,645 B1 (Hamasaki) and JP'515, as set forth in the office action mailed on Sep. 12, 2005, paragraph 18, has been withdrawn in response to the amendments to claims 1 and 5 set forth in the amendment

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filed on Mar. 13, 2006, as described supra. Zhu does not disclose that its single-layered photoreceptor exhibits an $E_{1/2}$ as recited in instant claims 1 and 5. Nor is there sufficient evidence in the present record to reasonably presume that the Zhu photoreceptor exhibits an $E_{1/2}$ as recited in instant claims 1 and 5.

The rejection of claims 1, 2, 4, 5, 7, and 8 under 35 U.S.C. 103(a) over US 2004/0096761 A1 (Lin), as evidenced by the ACS File Registry Number RN 26201-32-1 and US 5,350,844 (Martin), combined with JP'515, as set forth in the office action mailed on Sep. 12, 2005, paragraph 19, has been withdrawn in response to the amendments to claims 1 and 5 set forth in the amendment filed on Mar. 13, 2006, as described supra. Lin does not disclose that its single-layered photoreceptor exhibits an $E_{1/2}$ as recited in instant claims 1 and 5. Nor is there sufficient evidence in the present record to reasonably presume that the Lin photoreceptor exhibits an $E_{1/2}$ as recited in instant claims 1 and 5.

The rejection of claims 1 and 2 under the judicially created doctrine of obviousness-type double patenting over the claims of Application No. 10/459,720 in view of Hamasaki, as set forth in the office action mailed on Sep. 12, 2005,

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paragraph 21, has been withdrawn because a notice of abandonment was mailed on Oct. 12, 2005, in the '720 application.

5. The disclosure is objected to because of the following informalities:

(1) The amendment filed on Jan. 11, 2006, replaces the paragraph numbered [0060] with paragraphs numbered [0060] to [0062]. However, the paragraphs numbers "[0061]" and "[0062]" have already been used in the previous amendment filed on Apr. 28, 2005. The amendment filed on Apr. 28, 2005, replaced paragraph [0060] in the substitute specification filed on Apr. 28, 2005, with paragraphs numbered [0060] to [0062]. Applicants are required to correct the numbering of previously filed paragraphs numbered [0061] and [0062] on Apr. 25, 2005, such that they are renumbered as [0063] and [0064], respectively.

(2) The paragraph numbered [0062] filed on Jan. 11, 2006, is a duplicate of the paragraph numbered [0062] filed on Apr. 25, 2005.

(3) The added paragraph [0060], at lines 2-13, filed on Jan. 11, 2006, discloses forming a charge generating material dispersion comprising a binder resin that is a polyethylene terephthalate polymer of the formula disclosed in said

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paragraph, and forming a "dissolved charge transfer material" comprising a binder resin. The paragraph, at lines 24-26, further discloses that "[t]he binder resin may further include polycarbonate and may be a mixture of polycarbonate and polyethylene terephthalate polymer in a ratio of 1:99 to 99:1 by weight." However, the paragraph does not identify to what binder resin, e.g., that used in the charge generating material dispersion or that in the "dissolved charge transfer material," the binder resin described at lines 24-26, refers.

Appropriate correction is required.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1, 3-5, 7, 8, 13, 21, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(1) Claims 1, 5, and 13 are indefinite in the phrase "straining out dispersing materials to obtain a dispersion liquid" for lack of unambiguous antecedent basis in claims 1, 5,

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and 13. Claims 1, 5, and 13 do not previously recite using dispersion materials. Rather, claims 1 and 5 recite "dispersing, using a dispersion machine, with the first binder and a predetermined solvent, the charge generating material." Claim 13 recites "dispersing, using a dispersion machine, with a first binder and a predetermined solvent, a charge generating material." It is not clear how one strains out dispersing materials, when they are not present in the dispersion liquid.

(2) Claim 1 is further indefinite in the phrase "the charge generating material comprises titanyloxy phthalocyanine" (emphasis added) for lack of unambiguous antecedent basis in claim 1, which previously recites that the "charge generating material is titanyloxy phthalocyanine." The claim language "comprising" is broader than the claim language "is" because it is open, not closed, with respect to unrecited components.

(3) Claim 5 is further indefinite in the phrase "predetermined solvent is 1,1,2-trichloroethane" for lack of unambiguous antecedent basis in claim 5. Claim 5 recites the steps of "dispersing, using a dispersion machine, with the first binder resin and a predetermined solvent, the charge generating material" (emphasis added) and the step of "dissolving, in a predetermined solvent, the charge transport material . . . to obtain a dissolved charge transfer material" (emphasis added).

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It is not clear what predetermined solvent, e.g., that used in dispersing the charge generating material or that used in dispersing the charge transfer material, is 1,1,2-trichloroethane.

(4) Claim 13 is also indefinite in the phrase "the charge generating material dispersed in the dispersion liquid and mixed with the dissolved charge transfer material further includes . . . polycarbonate as the second binder resin" (emphasis added) for lack of unambiguous antecedent basis. Claim 13 previously recites that the "dissolved charge transfer material" comprises the second binder resin, not the dispersion liquid. Claim 13 also previously recites that the dispersion liquid comprises the charge generation material and the first binder resin. Thus, it is not clear what is the composition of the dispersion liquid.

Applicants' arguments filed on Jan. 11, 2006, with respect to the rejection of claim 13 in item (4) above have been fully considered but they are not persuasive.

Applicants assert that the amendment to claim 13 set forth in the amendment filed on Mar. 13, 2006, simply specifies that polycarbonate is included as the second binder resin.

However, the amendment to claim 13 set forth in the amendment filed on Mar. 13, 2006, does not overcome the rejection. As discussed in the rejection in item (4) above,

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claim 13 still recites that "the charge generating material dispersed in the dispersion liquid . . . further includes . . . polycarbonate as the second binder resin" (emphasis added).

Accordingly, the rejection of claim 13 stands.

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 8 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 8 recites that the first binder resin further includes polycarbonate and is a mixture of polycarbonate and polyethylene terephthalate polymer in a ratio of 1:99 to 99:1 by weight.

Claim 16 recites that the first binder resin further includes polycarbonate and is a mixture of polycarbonate and polyethylene terephthalate polymer in a ratio of 1:99 to 99:1.

The originally filed specification does not provide an adequate written description of the first binder resin. The originally filed specification in paragraphs [0015] and [0017] teaches that the binder resin in the single-layered photoreceptor "can be a mixture of polycarbonate and polyethylene terephthalate polymer in a ratio of 1:99 to 99:1." In other words, the originally filed specification discloses that the binder resin in the single photoreceptive layer can be the mixture recited in the instant claim. The originally filed specification does not disclose that the first binder resin used to form the dispersion liquid, which comprises the charge generation material, a solvent, and the first binder resin, can be the mixture as recited in the instant claim. Applicants have not indicated where in the originally filed specification there is written support that the first binder resin used in the formation of the charge generating material dispersion liquid is the mixture of polymers as recited in instant claims 8 and 16.

Applicants' arguments filed on Jan. 11, 2006, have been fully considered but they are not persuasive.

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Applicants assert that claims 9-18, as filed, have been copied into the specification as paragraphs [0060]-[0061]. Applicants submit that the claims 9-13 and 15-18 are in allowable form and an adequate written description of the first binder resin is submitted to be present in the specification.

Applicants' assertions are not persuasive. Originally filed claim 9, from which originally filed claim 16 depends, recites the step of "dispersing a binder resin . . . a charge generating material . . . to obtain a dispersion liquid," where the "binder resin is a polyethylene terephthalate polymer . . ." and the step of "dissolving . . . a charge transport material . . . a binder resin . . . to obtain a dissolved charge transfer material." Originally filed claim 16 recites that "the binder resin further includes polycarbonate and is a mixture of polycarbonate and polyethylene terephthalate polymer in a ratio of 1:99 to 99:1." However, originally filed claim 16 does not identify to what binder resin in claim 9, e.g., the binder resin in the charge generating dispersion liquid or the binder resin in the "dissolved charge transfer material," the binder resin in claim 16 refers. In the office action mailed on Aug. 20, 2004, originally filed claim 16 was rejected under 35 U.S.C. 112, second paragraph, for lack of unambiguous antecedent basis in claim 9 for the "the binder resin" recited in claim 16. See the

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office action mailed on Aug. 20, 2004, paragraph 4, page 6. As discussed in the rejection above, the originally filed specification at paragraphs [0015] and [0017] teaches that the binder resin in the single-layered photoreceptor "can be a mixture of polycarbonate and polyethylene terephthalate polymer in a ratio of 1:99 to 99:1," not the first binder resin used in forming the "dispersion liquid" that comprises the charge generating material dispersion liquid.

10. Claims 1, 3-5, 7, 8, 13, 21, and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

(1) Instant claims 1 and 5 recite that the "titanyloxy phthalocyanine is a crystal form which has at least 2 main peaks in the range of $(2\theta \pm 0.2) = 9.5^\circ$ to 27.1° ."

The originally filed specification does not provide an adequate written description of Bragg angle range $(2\theta \pm 0.2) = 9.5^\circ$ to 27.1° recited in instant claims 1 and 5.

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The originally filed specification in paragraph 0016 discloses that the crystal form of titanyloxy phthalocyanine has at least two main peaks in a range of " $(2\theta \pm 0.2) = 9.5^\circ$ to 27.3° " of a Bragg angle. The originally filed specification does not disclose that Bragg angle range " $(2\theta \pm 0.2) = 9.5^\circ$ to 27.1° " as recited in instant claims 1 and 5. Nor is there any appreciation or disclosure of criticality in the originally filed specification of a peak at a Bragg angle of 27.1° . Applicants have not indicated where in the originally filed specification there is antecedent basis for the Bragg angle value of 27.1° .

(2) Instant claims 1 and 5 recite that the single-layered electrophotographic photoreceptor exhibits an $E_{1/2}$ of "about 0.16 to about 0.22 $\mu\text{Joules}/\text{cm}^2$," where $E_{1/2}$ is an exposure quantity necessary for discharging 1/2 of V_0 , the initial potential.

The originally filed specification does not provide an adequate written description of the $E_{1/2}$ range of "about 0.16 to about 0.22 $\mu\text{Joules}/\text{cm}^2$ " recited in instant claims 1 and 5.

In the originally filed specification, Table 1 at page 11 reports the $E_{1/2}$ ($\mu\text{J}/\text{cm}^2$) values of the photoreceptors in examples 1-10 and comparative examples 1-5. The originally filed specification in paragraph [0052] defines $E_{1/2}$ ($\mu\text{J}/\text{cm}^2$) as the "photosensitivity given by the needed photon energy when the

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initial charged voltage decreased by 1/2 during exposure."

Table 1 reports that the particular photoreceptors in examples 1-10 exhibit values of $E_{1/2}$ of 0.169, 0.218, 0.218, 0.182, 0.231, 0.2, 0.222, 0.269, 0.22, and 0.271 $\mu\text{Joules}/\text{cm}^2$, respectively. However, examples 1-10 are outside the scope of instant claims 1 and 5, because they make their respective photoreceptors by forming dispersion liquids comprising titanyloxy phthalocyanine and a polycarbonate resin, instead of the polyethylene terephthalate polymer required in instant claims 1 and 5. Examples 2-5 and 7-10 are further outside the scope of instant claims 1 and 5 because the dispersion liquids in those examples do not comprise 1,1,2-trichloroethane as the solvent, as required in instant claims 1 and 5. There is no evidence in the present record to show that the photoreceptors made by the process steps recited in instant claims 1 and 5 exhibit the same $E_{1/2}$ values reported in Table 1. Examples 1-10 only provide antecedent basis for those particular photoreceptors. Those examples do not provide an adequate written description for the photoreceptors broadly recited in instant claims 1 and 5. Nor do examples 1-10 exhibit an $E_{1/2}$ of "0.16 $\mu\text{Joules}/\text{cm}^2$," let alone the values of "about 0.16 $\mu\text{Joules}/\text{cm}^2$ " or "about 0.22 $\mu\text{Joules}/\text{cm}^2$ ", i.e., the lower and upper limits of the $E_{1/2}$ range recited in instant

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claims 1 and 5. The term "about" admits variation. For example, the upper limit, "about 0.22 $\mu\text{Joules}/\text{cm}^2$," of the range recited in instant claims 1 and 5, includes values greater than 0.22 $\mu\text{Joules}/\text{cm}^2$. Furthermore, there is no general disclosure in the originally filed specification that the photoreceptors broadly recited in instant claims 1 and 5 exhibit any particular $E_{1/2}$, let alone an $E_{1/2}$ in the range of "about 0.16 to about 0.22 $\mu\text{Joules}/\text{cm}^2$ " recited in instant claims 1 and 5.

(3) Instant claim 5 recites that the second resin binder in the "dissolved charge transfer material" is polycarbonate.

Instant claim 13 and claims 21 and 22, which depend from claim 13, recite the step of forming a "dissolved charge transfer material" with a second binder resin, wherein "polycarbonate is the second binder resin."

The originally filed specification does not provide an adequate written description of the "dissolved charge transport material" recited in instant claim 5 and 13.

The originally filed specification in paragraphs [0029] and [0030] discloses that the charge transfer material and the binder resin are mixed. The specification further discloses that the binder resin may be a polyethylene terephthalate polymer differing from the binder resin of the dispersion liquid, which comprises the titanyloxy phthalocyanine.

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Examples 1-10 in the originally filed specification exemplify "dissolved" charge transfer materials comprising polyethylene terephthalate polymer associated with the trademark O-PET. See the originally filed specification at paragraphs [0034] to [0035]. Originally filed claim 13, which depends from originally filed claim 9, requires that the dispersion liquid includes "the polycarbonate as another binder resin." There is no disclosure in the originally filed specification that the binder resin used to form the "dissolved charge transfer material" may include polycarbonate as recited in instant claims 5 and 13.

Applicants' arguments filed on Jan. 11, 2006, with respect to the rejections set forth in items (1) and (2) above have been fully considered but they are not persuasive.

(1) Applicants assert that "it is respectfully submitted that the court has held that applicants are permitted to narrow the claim" citing Ex parte Williams and Neal.

Applicants' assertion are not persuasive for the reasons discussed in the rejection in item (1) above. Moreover, Williams is not precedent, nor is it applicable to facts in the instant situation. As noted by applicants, Williams is directed to the introduction of a "negative limitation," i.e., the exclusion of compounds that have substituents other than

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hydrocarbon substituents. In the instant case, applicants are trying to narrow a range. As discussed in the rejection above, there is no appreciation for the upper limit, "27.1°," of the Bragg angle range recited in instant claims 1 and 5. Applicants have not indicated where in the originally filed specification there is antecedent basis for the Bragg angle value of 27.1°.

(2) Applicants assert that samples shown in Table 1 at page 11 of the originally filed specification "clearly indicates that the claimed invention has a specific $E_{1/2}$ value range." Applicants further submit that "it is not necessary to provide examples for every possible $E_{1/2}$ value in the range because such a requirement would be unduly limiting," citing In re Wertheim.

Applicants' assertions are not persuasive for the reasons discussed in the rejection in item (2) above. Moreover, unlike Wertheim, as discussed in the rejection, the originally filed specification in the instant application does not describe any $E_{1/2}$ range, let alone a broader $E_{1/2}$ range, as was in the case of Wertheim. Furthermore, as discussed in the rejection, none of the ten examples make their respective photoreceptors by the process steps recited in instant claims 1 and 5. There is no evidence in the present record to show that the photoreceptors made by the process steps recited in instant claims 1 and 5 exhibit the same $E_{1/2}$ values reported in Table 1. Moreover,

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there is no appreciation of the $E_{1/2}$ range's endpoint values "about 0.16 $\mu\text{Joules}/\text{cm}^2$ " and "about 0.22 $\mu\text{Joules}/\text{cm}^2$." In addition, nowhere is it apparent that applicants teach that the entire range covers the same invention. Accordingly, the rejection stands.

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

12. Claim 1 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 2004/0009419 A1 (Yokota), as evidenced by ACS File Registry RN 26201-32-1 and Japanese Patent 01-299874 (JP'874). See the USPTO translation of JP'874.

Yokota discloses a single-layered photoreceptor comprising an aluminum drum having thereon a photoconductive layer comprising γ -titanyl phthalocyanine, a hole transport material, an electron transport material, and the polyester resin associated with the trademark O-PET obtained from "KANEBO." Example 1 in paragraphs 0051 and 0052. The polyester resin associated with the trademark O-PET is represented by Yokota's formula 6. See paragraphs 0037 and 0038. The polyester resin disclosed by Yokota meets the polyester resin composition

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recited in the instant claim. According to Yokota, the energy required for the initial electrification electric potential V_0 to decay to one half, $E_{1/2}$, is 1.62 mJ/m^2 , i.e., $0.162 \text{ } \mu\text{Joules/cm}^2$. See Table 1 at page 6, example 1. The $E_{1/2}$ value of $0.162 \text{ } \mu\text{Joules/cm}^2$ is within the range of "about 0.16 to about $0.22 \text{ } \mu\text{Joules/cm}^2$ " recited in instant claim 1.

Yokota does not disclose that the γ -titanyl phthalocyanine has at least 2 main peaks at Bragg angles in the range of 9.5° to 27.1° as recited in instant claim 1. However, as evidenced by the ACS File Registry Number RN 26201-32-01, it is well known in the art that the titanyl phthalocyanine (TiOPc) has the chemical structure as recited in the instant claims. It is also well known in the art that γ -titanyl phthalocyanine provides an $\text{CuK}\alpha$ X-ray diffraction pattern having peaks at the Bragg angles $2\theta \pm 0.2^\circ$ of 17.7° , 24.0° , and 27.2° . See the translation of JP'874, page 8, line 23, to page 9, line 2; page 22, line 23, to page 23, line 6; and Fig. 1. The Bragg angles of 17.7° and 24.0° are within the Bragg angle range of 9.5 to 27.1° recited in the instant claim. The Bragg angle of 27.2° is also within the range of $9.5 \pm 0.2^\circ$ to $27.1^\circ \pm 0.2^\circ$ because the upper value of the range can vary from 26.9 to 27.3° . Thus, it is reasonable to conclude that the Yokota γ -titanyl phthalocyanine meets the titanyl phthalocyanine limitations recited in instant claim 1.

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The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Instant claim 1 is written in product-by-process format. Yokota does not exemplify forming the photoconductive layer as recited in the instant claims. Yokota discloses forming a dispersion by dispersing its γ -titanyl-phthalocyanine, the hole transport material, the electron transport material, and the polyester resin associated with the trademark O-PET in chloroform. Yokota, example 1. However, as discussed supra, the single-layered photoreceptor disclosed by Yokota, as evidenced by the other cited references, meets the compositional limitations recited in the instant claims. The Yokota single-layered photoreceptor also has an $E_{1/2}$ value that is within the $E_{1/2}$ range recited in instant claim 1. Accordingly, the photoreceptor disclosed by Yokota appears to be the same or substantially the same as the photoreceptor made by the method recited in the instant claims. The burden is on applicants to prove otherwise. In re Marosi, 218 USPQ 289 (Fed. Cir. 1983); In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985); MPEP 2113.

Applicants' arguments filed on Jan. 11, 2006, have been fully considered but they are not persuasive.

Applicants assert that Yokota is not prior art because they have perfected their claim to foreign priority by filing an

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English-language translation of the priority document, Korea 2002-40105, first on Nov. 30, 2005, and then on Jan. 11, 2006, accompanied by a certification statement in compliance with 37 CFR 1.55(a)(4).

However, applicants have not perfected their claim to foreign priority for the subject matter recited in the instant claims. The translation does not provide antecedent basis within the meaning of 35 U.S.C. 112, first paragraph, for the subject matter recited in the instant claims for the following reasons:

(1) The translation does not describe the "electrically conductive substrate of a drum" or the "electrically conductive substrate of a cartridge" broadly recited in both instant claims 1 and 5. See the translation at page 15, line 2, which describes a substrate, which can be an aluminum drum. The term "electrically conductive substrate of a drum" recited in the instant claims is broader than the aluminum drum described in the translation because it includes conductive drums that are not aluminum, such as drums made of conductive polymers.

Applicants assert in their response filed on Jan. 11, 2006, that the substrate in the translation "is not limited to being on a particular cartridge or drum or aluminum drum." Applicants quote the disclosure in the translation at page 15, lines 1-6,

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"coating the dispersion coating liquid on the substrate, for example on the aluminum drum . . . As these are described by way of an example, this should not be considered limiting."

Applicants' assertion is not persuasive. The question is not whether the substrate in the translation is not limited to any particular substrate. Rather, the question is whether the translation adequately describes an "electrically conductive substrate of a drum" and an "electrically conductive substrate of a cartridge" as broadly recited in instant claims 1 and 5. For the reasons discussed above, the answer is "no." There is no description in the translation of an "electrically conductive substrate of a cartridge." Nor is there any generic description of "an electrically conductive substrate of a drum."

(2) The translation does not describe that the "titanyloxy phthalocyanine is a crystal form which has at least 2 main peaks in the range of $(2\theta \pm 0.2) = 9.5^\circ$ to 27.1° " as recited in instant claims 1 and 5. The translation at page 11, lines 1-3, discloses that the crystal form of titanyloxy phthalocyanine has at least two main peaks in a range of $(2\theta \pm 0.2) = 9.5^\circ$ to 27.3° of a Bragg angle. Nor is there any appreciation or disclosure of criticality in the translation of a peak at a Bragg angle of 27.1° . Applicants have not indicated where in the translation there is antecedent basis for the Bragg angle value

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of 27.1°. For the reasons discussed in paragraph 10, item (1), which are incorporated herein by reference, the translation does not provide antecedent basis for the Bragg angle range recited in instant claims 1 and 5.

(3) The translation does not describe that the single-layered electrophotographic photoreceptor exhibits an $E_{1/2}$ of "about 0.16 to about 0.22 $\mu\text{Joules}/\text{cm}^2$," where $E_{1/2}$ is an exposure quantity necessary for discharging 1/2 of V_0 , an initial potential, as recited in instant claims 1 and 5. In the translation, Table 1 at pages 20-21 reports the $E_{1/2}$ ($\mu\text{J}/\text{cm}^2$) values of the photoreceptors in examples 1-10 and comparative examples 1-5. For the reasons discussed in paragraph 10, item (2), supra, which are incorporated herein by reference, the translation does not provide antecedent basis for the $E_{1/2}$ range recited in instant claims 1 and 5.

(4) The translation does not describe the "dissolved charge transfer material" comprising a second binder resin that is polycarbonate as recited in instant claim 5. The translation at page 14, lines 12-20, discloses that the charge transfer material and the binder resin are mixed in a bowl, and then mixed with the dispersion liquid, where the binder resin can be a polyethylene terephthalate polymer differing from the binder resin of the dispersion liquid, which comprises the titanyloxy

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phthalocyanine. Examples 1-10 in the translation exemplify "dissolved" charge transfer materials comprising polyethylene terephthalate polymer associated with the trademark O-PET. See the translation, page 16, lines 1-9.

Applicants further assert that Yokota does not teach or suggest making their photoconductor with the solvent 1,1,2-trichloroethane, which exhibits an $E_{1/2}$ as recited in instant claim 1. Applicants conclude that the prior art neither anticipates nor renders obvious the photoreceptor recited in instant claims 1 and 5.

However, as discussed in the rejection above, instant claim 1 is written in product-by-process format. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in a product-by-process claim is the same as or obvious from the product of the prior art, the claim is unpatentable even though the prior product was made by a different method." MPEP 2113, citing Thorpe, supra. As discussed in the rejection, the Yokota photoreceptor meets the photoreceptor compositional limitations recited in the instant claims. Moreover, as discussed in the rejection, the Yokota photoreceptor also exhibits an $E_{1/2}$ value that is within

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the $E_{1/2}$ range recited in instant claim 1. Thus, the Yokota photoreceptors appears to be the same as or substantially the same as the photoreceptor made by the method recited in the instant claims. Applicants have directed the examiner to any objective evidence to show otherwise. Marosi, supra; Thorpe, supra; MPEP 2113.

13. Claims 1, 5, 7, and 8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Japanese Patent 10-020515 (JP'515), as evidenced by the ACS File Registry Number RN 26201-32-1 and Japanese Patent 61-271050 (JP'050). See the THOMSON machine-assisted English language translation of JP'515 and the USPTO translation of JP'050 for cites.

JP'515 discloses a single-layered photoreceptor comprising an aluminum drum having thereon a photoconductive layer comprising alpha titanylphthalocyanine, a hole transport material, an electron transport material, a polycarbonate resin, and the polyester resin associated with the trademark O-PET obtained from Kanebo, Ltd. See the THOMAS translation of JP'515, paragraphs 0046-0055, and example 3 in paragraphs 0059-0061. The polyester resin associated with the trademark O-PET is a copolymer comprising the units represented

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by JP'515 formula 11 and ethylene terephthalate. The polyester resin disclosed by JP'515 meets the polyester resin composition recited in the instant claims. The polycarbonate and polyester resins are each present in an amount of 7 parts by weight.

Thus, the weight ratio of the polycarbonate to the polyester is 1:1, which is within the range of 1:99 to 99:1 recited in instant claim 8.

JP'515 does not disclose that the alpha titanyl phthalocyanine has at least 2 main peaks at Bragg angles in the range of 9.5° to 27.1° as recited in the instant claims. However, as evidenced by the ACS File Registry Number RN 26201-32-1 and the USPTO translation of JP'050, page 6, it is well known in the art that titanyl phthalocyanine (TiOPc) has the chemical structure as recited in the instant claims. It is also well known in the art that alpha titanyl phthalocyanine provides an $\text{CuK}\alpha$ X-ray diffraction pattern having peaks at the Bragg angles $2\theta \pm 0.2^{\circ}$ of 12.3° , 16.3° , and 23.3° , which are within the range recited in the instant claims. See the USPTO translation of JP'050, page 6, line 17, to page 7, line 2; page 7, lines 12-14; and Fig. 1. Thus, it is reasonable to conclude that the JP'515 alpha titanyl phthalocyanine meets the titanyl phthalocyanine limitations recited in instant claims 1 and 5.

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The burden is on applicants to prove otherwise. Fitzgerald, supra.

JP'515 does not disclose that its single-layered photoreceptor exhibits an exposure quantity necessary to discharge $1/2$ of the initial potential V_0 , $E_{1/2}$, of "about 0.16 to about 0.22 $\mu\text{Joules}/\text{cm}^2$ " recited in instant claims 1 and 5. However, as discussed above, the single-layered photoreceptor disclosed by JP'515, as evidenced by the other cited references, meets the compositional limitations recited in the instant claims. Accordingly, because the JP'515 photoreceptor meets the compositional limitations recited in instant claims 1 and 5, it is reasonable to presume that the JP'515 photoreceptor exhibits an $E_{1/2}$ as recited in instant claims 1 and 5. The burden is on applicants to prove otherwise. Fitzgerald, supra.

Instant claims 1, 5, 7, and 8 are written in product-by-process format. JP'515 does not exemplify forming the photoconductive layer as recited in the instant claims. As discussed supra, the single-layered photoreceptor disclosed by JP'515, as evidenced by the other cited references, meets the compositional limitations recited in the instant claims. Accordingly, the photoreceptor disclosed by JP'515 appears to be the same or substantially the same as the photoreceptor made by the method recited in the instant claims. The burden is on

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applicants to prove otherwise. Marosi, supra; Thorpe, supra; MPEP 2113.

Applicant's arguments filed on Jan. 11, 2006, have been fully considered but they are not persuasive.

Applicants assert that the JP'515 photoreceptor does not comprise a titanyloxy phthalocyanine having at least two main peaks at Bragg angles in the range of 9.5 to 27.1° as recited in instant claims 1 and 5. Applicants assert that JP'515 does not teach or suggest making their photoconductor with the solvent 1,1,2-trichloroethane, which exhibits an $E_{1/2}$ as recited in instant claim 1. Applicants conclude that the prior art neither anticipates nor renders obvious the photoreceptor recited in instant claims 1 and 5.

However, as discussed in the rejection above, the JP'515 single-layered photoreceptor comprises alpha titanyl phthalocyanine. As evidenced by the USPTO translation of JP'050, page 6, it is also well known in the art that alpha titanyl phthalocyanine provides an $\text{CuK}\alpha$ X-ray diffraction pattern having peaks at the Bragg angles $2\theta \pm 0.2^\circ$ of 12.3°, 16.3°, and 23.3°. Those peaks are clearly within the range of 9.5 to 27.1° recited in instant claims 1 and 5. Thus, it is reasonable to conclude that the JP'515 alpha titanyl phthalocyanine meets the titanyl phthalocyanine limitations

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recited in instant claims 1 and 5. Applicants have not directed the examiner to any objective evidence to show otherwise.

Moreover, for the reasons discussed in the rejection above, it is reasonable to presume that the JP'515 photoreceptor exhibits that an $E_{1/2}$ value as recited in instant claims 1 and 5. Applicants have not directed the examiner to any objective evidence to show otherwise.

Furthermore, as discussed in the rejection above, instant claims 1 and 5 are written in product-by-process format. The photoreceptor disclosed by JP'515 meets the photoreceptor compositional limitations recited in the instant claims. Thus, the JP'515 photoreceptors appears to be the same as or substantially the same as the photoreceptor made by the method recited in the instant claims. Applicants have not directed the examiner to any objective evidence to show otherwise. Marosi, supra; Thorpe, supra; MPEP 2113.

14. Claims 9, 11, 12, 15, 23, and 24 are allowable over the prior art of record.

The prior art of record does not teach or suggest the methods of making a single-layered photoreceptor as recited in those claims for the reasons discussed in the office action

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mailed on Sep. 12, 2005, paragraph 22, which are incorporated herein by reference.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Mr. Nam Nguyen, can be reached on (571) 272-1342. The central fax phone number is (571) 273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD

May 19, 2006

Janis L. Dote
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